

**AMENDMENTS TO THE SPECIFICATION**

*At the paragraph bridging pages 1 and 2, please amend the Specification as follows:*

On the other hand, in the quantum cryptosystem, the photon is used as a communication medium, and information of one bit is transmitted by one photon so that the quantum effect such as the uncertainty principle is generated. If a person who wants to tap the communication (hereinafter, "interceptor") randomly selects a base to measure the photon without knowing a quantum state such as a phase, the quantum state is ~~changes~~changed. Therefore, on a receiver side, it is possible to recognize whether transmission data is intercepted by confirming the change in quantum state of the photon.

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*At page 22, line 4, please amend the Specification as follows:*

As described above, the deterministic, stable-characteristics check matrix  $H(n \times k)$  for the "Irregular-LDPC code" can be created by performing the method of forming the "Irregular-LDPC code" based on the affine finite geometry (~~Fig. 2~~Fig. 2A, step S1).

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